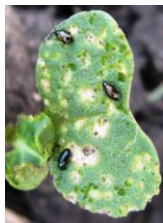


## Summary of Insects on Crops in Manitoba in 2016

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Abbreviations used: The following abbreviations will be used in this document to indicate the following agricultural regions in Manitoba; NW=Northwest, SW=Southwest, C=Central, E=Eastern, I=Interlake.

Estimated acres: Estimated acres grown in Manitoba in 2016 (shown in brackets under each commodity title) are from the Manitoba Agricultural Services Corporation (MASC) 2016 Variety Market Share Report. The symbol ↑ indicates an increase in acres from 2015, whereas ↓ indicates a decrease in acres from 2015.

**Summary:** Flea beetles (*Phyllotreta* spp.) in canola and cutworms continued to be at economical levels in many areas of Manitoba in 2016, although flea beetle damage was less than in 2015. Alfalfa weevil (*Hypera postica*) was at high levels in many alfalfa fields. Armyworms (*Mythimna unipuncta*) were a concern in some small grain fields. Pea aphid (*Acyrtosiphon pisum*) got to economical levels in many pea fields. Some canola fields had economical levels of *Lygus* bugs in July and August.

### Small Grain Cereals

**(Wheat (spring))-**2,696,042 acres↓ + 5,480 acres organic↑ + 3,509 acres durum↑; **Wheat (Winter)-**139,532↓ + 823 acres organic↓; **Barley-**362,097 acres↓; **Oats-**346,750 acres↓ + 3,355 acres organic↓; **Fall Rye-**112,383 acres↑; **Triticale-**3,097 acres↓

**Wireworms:** There were some reports of wireworm damage to cereal crops in Southwest Manitoba.

**Cutworms:** Cutworms populations were still a concern in many areas of Manitoba in 2016. Some crops in the Swan Valley area (NW) were reseeded because of cutworm damage.

**Wheat midge (*Sitodiplosis mosellana*):** Wheat midge was generally not a major concern in Manitoba in 2016. The only reports of insecticide applications for wheat midge were from western Manitoba, and only for a small amount of acres.

### Sap Feeders

**Aphids:** Aphids began to be noticed in cereal crops in late-May. Aphids got to quite noticeable levels in some fields, although there were only a few reports of insecticides being applied for aphids in cereals. High levels of natural enemies of aphids were noted in some fields.

**Thrips:** Some barley in the Eastern region had high levels of thrips and was treated with insecticide.

## Defoliators

**Grasshoppers:** There was some field edge spraying for grasshoppers in cereals in the Central region, otherwise grasshoppers were a minor concern in small grains.

**Armyworm** (*Mythimna unipuncta*): Armyworms were a concern and resulted in insecticide applications in some small grain fields in Central and Eastern Manitoba. Most of the insecticide applications for armyworms occurred in July. Some head clipping was noted in some fields in late-July. There has been some control of armyworms in small grains in Manitoba every year since 2010.

**Cereal Leaf Beetle** (*Oulema melanopus*): No economic populations of cereal leaf beetle were reported, and no new areas of range expansion in Manitoba were reported in 2016. The further east cereal leaf beetle has been verified in Manitoba is still Carman.

In early-July, a shipment of adult wasps of the parasitoid *Tetrastichus julis* (Eulophidae) was sent from Lethbridge, Alberta to Carman and about 300 wasps were released in cereal fields near Portage la Prairie (C) and Rathwell (C). A second release of about 300 wasps of *T. julis* was distributed among wheat fields near Portage la Prairie (C), Rathwell (C) and Roseisle (C) on July 22<sup>nd</sup>.

## Corn

(328,087 acres **grain corn**↑; 96,879 acres **silage corn**↑)

**Cutworms:** High populations of cutworms in corn were reported from the Northwest region in early-June.

**Wireworms:** Some wireworm damage to corn was reported from the Central region.

**Seedcorn maggot** (*Delia platura*): No damage to corn from seedcorn maggot was reported in Manitoba in 2016.

**European corn borer** (*Ostrinia nubilalis*): Some high populations of European corn borer were reported from the Central region.

**Northern corn rootworm** (*Diabrotica barberi*): In addition to the established population of northern corn rootworm found near Souris in 2015, a survey for adult northern corn rootworms in August 2016 also found established populations in corn fields near Morden and Winkler. All fields where northern corn rootworm has so far been found to be established in Manitoba have had corn in the same field for many consecutive years. Crop rotation is recommended as the preferred strategy to manage corn rootworm.

## Canola and Mustard

(**Argentine canola**-3,173,535 acres↑; **Rapeseed**-5,463 acres↓; **Mustard**-6,128 acres↑)

**Cutworms:** Cutworms were a concern in some canola fields, resulting in some insecticide applications. There were reports of canola in the Northwest being reseeded because of cutworm feeding. Redbacked and dingy cutworms appear to be the main species of concern.

**Root Maggots** (*Delia* spp.): There were some reports of root maggots being noted by agronomists and farmers examine canola roots in the Northwest and Central regions.

### Sap Feeders

**Lygus bugs** (*Lygus* spp.): There were reports of some canola fields with economical levels of Lygus bugs in July and August. High levels of Lygus bug in canola were reported from the Eastern, Interlake and Central regions of Manitoba.

**Aster Leafhopper** (*Macrostelus quadrilineatus*): Aster yellows was detected in canola in some areas, but only at low levels.

**Swede midge** (*Contarinia nasturtii*): Pheromone-baited traps were set up at 22 sites to trap and determine levels of swede midge in Manitoba in 2016. No swede midge were collected from the traps.

High or potentially economical levels of swede midge have never been documented in Manitoba.

### Defoliators

**Flea beetles** (*Phyllotreta* spp.): Use of seed treatments to manage early-season flea beetle populations continues to be common. However, feeding damage to young plants at or above threshold levels, and additional use of foliar insecticides, occurred in some areas. Overall the level of damage by flea beetles was less than the previous year.

**Bertha Armyworm** (*Mamestra configurata*): Levels of bertha armyworm larvae were generally low and uneconomical, although there was a small amount of insecticide applied for bertha armyworm in the Northwest.

Pheromone-baited traps to monitor adult moths of bertha armyworm were set up at 84 locations in Manitoba in 2016. The monitoring period was June 5<sup>th</sup> to July 30<sup>th</sup>. Seventy-two of the 84 traps were in the low risk category (less than 300 cumulative moth count). Two traps in the northwest were in the moderate risk category (900 to 1,200 cumulative moth count). Trap counts from 2016 were generally higher than the previous year. Table 1 shows the highest trap counts for 2016.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) moths in pheromone-baited traps in Manitoba in 2016.

| Nearest town | Region    | Trap Count | Risk Category |
|--------------|-----------|------------|---------------|
| Durban       | Northwest | 1,116      | Moderate      |
| Benito       | Northwest | 938        | Moderate      |
| Lena         | Central   | 530        | Uncertain     |
| Kenville     | Northwest | 462        | Uncertain     |
| Minto        | Southwest | 447        | Uncertain     |
| Roblin       | Northwest | 408        | Uncertain     |

Peak trap catches occurred in most traps during the last week in June and first week in July. The highest trap catch in a single week was 376 at a trap near Durban on the week of July 3 - 9<sup>th</sup>.

**Diamondback moth** (*Plutella xylostella*): Levels of diamondback moth larvae were generally low and there were no reports of control being needed.

Pheromone-baited traps for adult moths were set up at 78 locations in Manitoba in 2016. The monitoring period was generally from May 1<sup>st</sup> to late-June. Some traps started to record moth counts in early-May that likely resulted from low populations arriving in Manitoba prior to or during the week of May 1-7. Levels of moths captured in traps in subsequent weeks varied depending on the region of Manitoba. Although diamondback moth arrives on winds from the south, the northwest region had the highest cumulative moth counts. Table 1 shows the highest cumulative trap counts for 2016.

Table 1. Highest cumulative counts of diamondback moth (*Plutella xylostella*) in pheromone-baited traps in Manitoba in 2016.

| Nearest town | Region    | Trap Count |
|--------------|-----------|------------|
| Minitonas    | Northwest | 237        |
| The Pas      | Northwest | 184        |
| The Pas      | Northwest | 174        |
| Morris       | Central   | 138        |
| The Pas      | Northwest | 118        |
| Ste. Rose    | Northwest | 110        |

**Grasshoppers:** There were no reports of economical populations of grasshoppers in canola in 2016.

### Flax

(Flax-66,261 acres↓ + 900 acres organic flax↓)

**Potato aphid** (*Macrosiphum euphorbiae*): There were no reports of high populations of aphids on flax in 2016.

### Sunflowers

(31,170 acres non-oil↓; 36,752 acres oil↓)

**Cutworms:** Cutworms damage was evident in some fields of sunflowers, and there were reports of insecticides being applied for cutworms in some fields.

**Sunflower beetle** (*Zygogramma exclamationis*): No high populations or spraying for sunflower beetles was reported in 2016. The last year that economic populations of sunflower beetle have been reported in Manitoba is 2009.

### Seedhead Insects

Some fields of sunflowers were treated with insecticides during early flowering to control seedhead insects, mainly **Lygus bugs** (*Lygus* spp.) and **banded sunflower moth** (*Cochylis hospes*). Populations of **Red sunflower seed weevil** (*Smicronyx fulvus*) were low again in most areas this year. Sunflower seed maggots (*Neotephritis finalis*) were also noted in some fields.

### Beans (Dry Edible)

(112,306 acres↓: Pinto-48,292 acres↑, white pea (navy)-24,226 acres↓, black-17,512 acres↓, kidney-11,906 acres↓, cranberry-2,237 acres↓, small red-762 acres↓, other dry edible-7,371 acres)

No insect issues were noted in dry edible beans in 2016.

### Peas (Field)

(170,121 acres↑)

**Cutworms:** Cutworm were an issue in peas and control needed in the Northwest region.

**Pea aphids** (*Acyrtosiphon pisum*): Pea aphid levels were above economic threshold in many fields, and some pea fields in all agricultural regions of Manitoba were treated with insecticides for pea aphids. Pea aphid control began in late-June and continued into late-July.

### Soybeans

(1,646,521 acres↑)

**Soybean Aphid** (*Aphis glycines*): Soybean aphids started to be noted in very low levels in soybean fields in mid-July. No economical populations of soybean aphids or insecticide applications for soybean aphids were reported.

**Spider mites:** No economically damaging populations of spider mites were reported from soybeans in Manitoba.

**Green Cloverworm** (*Hyponomeuta scabra*): Only very low levels of green cloverworm were detected in soybeans in Manitoba in 2016.

### Hemp

(14,491 acres for grain↓)

No insect issues were noted in hemp in 2016.

### Forages and Forage Seed

**Alfalfa weevil** (*Hypera postica*): Feeding injury and high levels of larvae of alfalfa weevil were common in many alfalfa fields. Some alfalfa for hay was cut early because of the presence of alfalfa weevil. Insecticides were applied in some fields and there were some reports of insecticides not providing good control of alfalfa weevil. Alfalfa weevil control started in early-June and extended into mid-July.

David Ostermann with Manitoba Agriculture assessed the percentage of alfalfa weevil parasitized at 2 locations in Manitoba (near Fannystelle and the Winnipeg floodway). Levels of parasitism by the larval parasitoid *Bathyplectes* sp. (Ichneumonidae) were 4% (Winnipeg floodway) and 13% (Fannystelle). Levels of parasitism by the larval parasitoid *Oomyzus incertus* (Eulophidae) were 6% (Fannystelle) and 4% (Winnipeg floodway). *Bathyplectes curculionis* is a key biological control agent for alfalfa weevil in some

regions of North America, and it is hoped that biological control can eventually be a greater factor in alfalfa weevil management in Manitoba.

**Lygus bugs** (*Lygus* spp.): Some alfalfa seed fields were sprayed to control Lygus bugs.

**Armyworm** (*Mythimna unipuncta*): Some perennial ryegrass in the Central region was treated with insecticide for armyworms.

## Potatoes

Report from: Vikram Bisht, Manitoba Agriculture.

**Colorado potato beetle** (*Leptinotarsa decemlineata*): A few samples of Colorado potato beetles were found in the later part of the potato season; some may have escaped the neonicotinoid insecticides or developed some tolerance. This class of chemistry does not appear to be performing as well as it used to in a few locations.

**Potato psyllid** (*Paratrioza cockerelli*): Dr. Vikram Bisht is coordinating potato psyllid monitoring in Manitoba as part of a national program being led by Dr. Dan Johnson at the University of Lethbridge. Two potato psyllids were found in Manitoba in 2016. No potato psyllids were previously found in monitoring from 2013 to 2015.

**European Corn Borer** (*Ostrinia nubilalis*): Damage was seen in some fields, close to potato fields where European corn borer damage was seen in 2015. Insecticide applications were made by some growers with effective control.

**Aphids (Green Peach, Potato and other types)**: The numbers were very low for most of the season. Only one of 9 seed fields (being monitored with suction traps) showed a sudden increase towards the end of season. Harvest of nearby crops was probably responsible for the influx.

## Vegetable Crops

Report from: Tom Gonsalves, Vegetable Specialist, Manitoba Agriculture, and Vikram Bisht, Horticulture Pathologist, Manitoba Agriculture.

**Flea beetles** (*Phyllotreta* spp.) **on Cruciferous vegetables**: There was moderate to high early season flea beetle pressure on cruciferous vegetable crops in the Portage la Prairie area. Also, there was late-season flea beetle damage on the kale in the Manitoba Agriculture high tunnel in Portage la Prairie.

**Carrots and Onions**: In 2016, as in 2013 to 2015, aster leafhopper numbers were significantly lower compared to 2012, resulting in very low level of aster yellows on carrots.

## Stored Grains

Report from: Brent Elliott, Program Officer, Canadian Grain Commission

**Rusty grain beetle** (*Cryptolestes ferrugineus*): Rusty grain beetles continue to be the most common insect found in stored grain. Numerous reports of infestation, notably in grain stored over the summer season,

were received this year. It is important to note that this pest can survive cold temperatures for long durations and as a result may survive throughout the entire winter season in grain that is not properly cooled. The rusty grain beetle is present year round and for summer stored grain the beetle is able to fly readily from bin to bin and infest during the summer months as well.

**Lesser grain borer** (*Rhyzopertha dominica*) – the survey for lesser grain borer in Canada continued for a third year with the inclusion of sites further north while retaining most of the southern locations. The joint project with Kansas State University is now finished.

Lesser grain borer traps were placed at 22 locations across the Prairie Provinces ranging from a southerly latitude of 49.1° to a northerly latitude of 53.5°. The insect was collected at 10 of 22 locations and the data currently shows that the insect was only collected south of 50.2° north latitude. This does not mean that the insect will not occur north of that point, only that it wasn't collected during the 2016 season at our sites north of that point. The survey will continue in 2017. Regular monitoring of grain (every 2-4 weeks) is a standard recommendation for all insect pests of stored grain.